

NEWSLETTER OF THE Z88 USERS' CLUB

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EDITORIAL

September was an important time for the Z88, with the 'official' launch of the finished machine to the retail market, and the first major Z88 exhibition presence at the Personal Computer World Show at Olympia. Included with this issue are press cuttings which appeared as a result of the launch, and in this issue is a report on the PCW show.

Since the last issue, the Z88 has gone on sale in Dixons and Comet, and I know a number of you have purchased machines from these outlets. The long term success of the machine will now be determined by the effectiveness of CC's marketing, and the quick appearance of third party software for the machine.

In two branches of Dixons where the machine is on sale, I went into the shop for a demo of the Z88 posing as a potential purchaser.

One of the young gentlemen who offered assistance was not sure how to switch the machine on! In both cases, the salesmen were not aware of most of the facilities offered by the Z88 software. I was also told that the Z88 was IBM PC compatible, and would run any IBM PC software (!). When I asked the friendly salesperson where in fact I would put the IBM floppy discs in order to load the software, he wasn't quite sure.....

If this state of affairs is typical across the country, one can only assume that people who buy the Z88 are those that are already aware of the machine's capabilities.

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One could perhaps also assume that because of this lack of knowledge for demonstrating the machine there are a number of sales being lost because the true capabilities of the machine are not being shown.

My sympathy lies with the salespersons, whose intimate product knowledge has to cover anything from a camera to a computer to a hi-fi system, but this does not offer a solution.

One possible help would be a demo EPROM card, configured to guide the casual potential purchaser through the facilities of the Z88. I believe Sinclair Research did a similar thing for the QL, since that machine also suffered from a lack of awareness on the part of the sales staff.

MEMBERS' LETTERS

Charles Schofield, (0126)
Bromley,
Kent.

Dear Sir,

I bought my Z88 from Dixons in Bromley on Monday 31st August, and have been very pleased with it so far.

The only frustrating point is the lack of availability of add-on Ram packs in the shops. I have now ordered one direct from CC, as I soon found myself running short of memory. (I did manage to temporarily cure my problem; while experimenting with BASIC I tried entering the statement 'HIMEM = HIMEM + 40'.

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Not only did this freeze up the keyboard, but pressing the reset button resulted in the loss of all my saved files).

For printing I use a Brother EP44 thermal printer/portable typewriter. This connects to the Z88 using a RS232 cable wired up in the way shown in the manual. I have also found that this 'standard' wiring works very well with an Apricot computer which I have. Since my 'accident' I now periodically dump my more important files onto floppy disk, via the Apricot.

The feature which impresses me most about the Z88 is the sheer convenience and usability arising from the fact that all programs and data are always immediately available because they are kept in ROM or RAM.

This extends from the simple pleasure of turning the machine on and being able to restart work straight away from the point where I had left off, to the ability to call up any of the applications or pop-downs regardless of what I might currently be working on.

One particular feature that I find very useful is the 'Execute File' option. I have written a short article which shows how they can be very simple to set up and includes an example to simplify the editing procedures for BASIC programs.

Finally, I would like to congratulate the editor on setting up the Z88 User's Club and producing such an informative and entertaining first edition of Z88 EPROM.

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P.S. I have just received a 128K RamPack from CC, exactly 14 days after sending off my order.

Charles Schofield
Bromley, Kent

Chris Robinson, (0131)
South Croydon.

Dear Roy,

Having felt the need for some time to acquire a portable wordprocessor, I was looking closely at the Z88 from its launch in Birmingham earlier in the year. My problem is that my work as an educational adviser requires much writing of reports both at home and in the office. I have BBC machines and IBM compatible RM Nimbus machines. At home, however, (reflecting my own growth in the computing field) I have a Spectrum and a QL. I couldn't start my work on one machine in the office and finish it at home on another. (I did try transmitting files via electronic mail but that was not very effective for various reasons.) I have carried my QL into work on many occasions but it has been a chore connecting it up at each venue. The Z88 looks like an ideal answer.

In a bid to restrict expenditure to a minimum, I did not purchase the mains adapter or the printer lead. I already have a surfeit of adapters that should be suitable and thought the printer lead that connected the Spectrum Interface 1's RS232 9 way D connector to the printer's 25 way D connector would be suitable. But this is where I have met with two problems:

1) The transformer I have attempted to use (made by Philips) is set to deliver 6v with positive on the outer pole of the connector. However it does not seem to work the Z88 so I keep Duracells standing by. Any Comments?

(Ed: Be very careful when using any mains adapters - the Z88 needs a regulated 6v supply (ie. the voltage is 6v whatever the current drawn from the supply) Most battery eliminators are not regulated - the 6v output can be as high as 10 or 11v with some, and a voltage this high may damage the Z88.)

2) To obviate the need for a new printer cable, I have constructed an adapter to connect my Z88 to the Speccy Interface lead. I provide the details below:

Z88/Spectrum Int.1 RS232 Adapter

Parts required : 1 9 way female D connector
1 9 way male D connector
2 9 way D connector covers
A short length of 6 core wire

Also: Soldering iron, solder, patience, skill!

Solder wires between the following pins:

Z88 Female	Spec Male
2 -----	3
3 -----	2
4 -----	5
5 -----	4
7 -----	7
9 -----	9

Also join pins 5 and 8 on the Z88 connector. Proof that the adapter works lies in this letter prepared on my new machine.

QUERIES, HINTS & TIPS

Barry Cornhill (0124)

Problem with PipeDream spreadsheet: If you accidentally give a column width of zero the column is no longer accessible and goes 'missing'. Is there any way of recovering it?

Ian Braby MPS (0123)

You mentioned in your article that the case the Z88 comes in is all very well, but.... Well, rather than have anything made, I went into my local Ryman's where I found an A4 folder made of stiff card (although also available in plastic) with elastic straps to keep it closed at a cost of just £1.10 (£1.75 for the plastic version).

Phil Borman (0143)

There are three extra 'devices' not mentioned in the Z88 manual. These are :INP.0 (the keyboard), :OUT.0 (the screen), and :ROM.0 (the 128k ROM inside the machine.) The keyboard and screen are accessible from BASIC using OPENIN and OPENOUT. The list of devices can be found from the Filer - use Catalogue Files and give a filename of :*/
COM.0 is the RS232 port for input and output (PRT.0 is output only). I do not know what NUL.0 is used for. If you give a filename of :ROM.0/* you can catalogue the ROM. It appears that the separate 'jobs' are distinct files in ROM, simply EXECed by OZ when required.

Ian Braby MPS (0123)

Printing: When you make any changes to the PrinterEd, they will be ignored until you update with <>FU.

Ian Braby MPS (0123)

With PipeDream in spreadsheet mode you cannot use the <>PA command to set the printer to condensed print. CC suggested that I set up a separate printer driver for these, adding 15 to the list of initialisation codes to set condensed print. If this causes blank pages between pages of text, set the page length to 0 lines on the Options page.

Ian Braby MPS (0123)

Has anyone got the terminal to work? CC told me to wire 5 to 4 and 4 to 5 rather than 5 to 20 and 4 to 5. Not a peep!

SOFTWARE LIBRARY - QL TRANSFER

The first programme in the club software library is a utility to transfer files in the Z88 to or from the Sinclair QL. Written by Phil Borman of Grimsby, the programme is written in QL Superbasic, and compiled using QLiberater.

The programme allows you to send and receive any type of Z88 file, to transfer text files between Quill and PipeDream, and to print Z88 files on a printer connected to the QL. It allows files to be archived from the Z88 onto your QL storage - either Microdrive or floppy.

I can supply a copy of the programme to any members but only on Microdrive - I do not yet have discs for my QL! If you would like a copy, please send me:

1) A letter clearly asking for QL Transfer by Phil Borman, quoting your own membership no.

- 2) A blank, formatted microdrive cartridge, with write-protect tab intact.
- 3) Return label and return postage.

Any requests received without all the above will be ceremoniously burnt!

Alternatively, send (1) above & a cheque/PO for £2.50, made payable to the Club, to cover the cost of a microdrive cartridge and return p&p. I will also send details on making the necessary lead for Z88-QL file transfer. If this is likely to be technically beyond anyone, I believe David Batty at Sector Software sells a lead for £8.00. (A review of Sector Software's QZ transfer pack will be in the next issue.)

ABSOLUTE BUNKUM

That is probably the best way to describe my article in the last Z88 EPROM called 'Saving Battery Power'. In that article I suggested you should not save to EPROM on battery power because the process used a lot of current from the batteries.

CC have been in touch, complaining that this is a load of rubbish, and giving me the facts to correct my mistake.

It appears that when the Z88 saves to EPROM, because it momentarily switches the display off, it actually uses slightly less battery power than when normally using the machine. (Grovel, grovel, I got it wrong. Sorry) Seriously, although my article was based on a sound enough assumption, I did not think it far enough through. Apologies to anyone I may have misled.

EPROM POWER

A number of members have written asking whether an EPROM card left in slot 3 uses any power when not being read from or written to. I think this stems from the instruction sheet supplied with the cards which states that a RAM card in slot 3 uses more power than the same card in slots 1 or 2.

CC tell me that leaving an EPROM in slot 3 uses absolutely no power, unless it is being written to (see above!!) or read from. I suspect this definitive response will save some wear and tear on EPROM card edge connectors!

PROGRAMMES

This issue's first programme is from Stu McMeekin (0133) of Cumbernauld. It is a short, lighthearted prog which makes the Z88 seem very clever indeed....

```
1 ON ERROR GOTO 2000
10 CLS
20 PRINT "I am going to think of an object. You
will then be able to ask me up to 20
questions."
30 PRINT "about the object to help you guess
what it is."
40 PRINT
50 PRINT "I'm thinking now....."
60 PRINT
70 FOR I=1 TO 2000
80 LET A=A+1
90 NEXT I
100 FOR I= 1 TO 19
```

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```
120 PRINT "You may now ask me question number
";I;": "
130 INPUT A$
140 FOR J=1 TO RND(400)+250
150 LET B=B+1
160 NEXT J
170 IF RND(1)>.3 THEN PRINT "No." ELSE PRINT
"Yes."
190 NEXT I
200 PRINT "You must now guess what the object
is:"
210 INPUT A$
220 CLS
230 PRINT
240 PRINT "YOU ARE ABSOLUTELY CORRECT! WELL
DONE!"
250 PRINT
260 PRINT "Do you want to play again?"
270 INPUT A$
280 IF A$="Y" GOTO 10
290 CLS
300 PRINT "O.K. - BOG OFF THEN! SEE IF I CARE."
310 END
2000 CLS
2010 PRINT "CHEAT! Just for that I won't tell
you so bleah!"
```

The second prog comes from Ian Braby MPS (0123) of Guildford. It is a short routine useful if you keep accounts, since it calculates VAT exclusive prices and the VAT amount when a VAT inclusive price is entered.

```
10 INPUT "VAT Price? ";V
20 U=V*100:A=INT(U/1.15)/100:B=V-A
30 PRINT "VAT Exclusive Price: ";A
40 PRINT "VAT: ";B
```

'EXECUTE' FILES

Charles Schofield (0126), Bromley, Kent.

One of the very handy facilities of the Z88 is the 'execute' option within the Filer popdown. This enables the Z88 to take the contents of a file and treat them character by character as though they had been typed at the keyboard.

One of the areas for practical applications of this lies with storing sequences of keystrokes which need to be frequently repeated. The whole sequence then can be simply repeated by typing 'square' F to invoke the Filer, 'diamond' EX to select the Execute option, and finally entering the appropriate filename (preferably a short one!).

One such sequence of keystrokes that I have saved in this manner are those which enable a BASIC program to be edited using pipedream. Page 200 of the manual (Using CLI files) details the steps involved to transfer a program listing to pipedream. I have stored these steps in a file called 'E', which can be typed in as follows:

```
#B
LIST#+S~E
#-S
#P
|FL
:RAM.-/S.sgn
~D~D~DY~E
```

The above 8 lines should be typed into PipeDream and saved using the 'plain text'

option. The resulting file is invoked from BASIC by invoking the Filer popdown, selecting the execute option and entering the filename that it was saved as. The action taken by the Z88 can be readily followed provided one remembers that the characters in the file are being interpreted one at a time as though they were being typed at the keyboard. The other point that needs to be explained is that '#' represents the 'square' key and that '|' represents the 'diamond' key.

Firstly, BASIC is re-entered. The program is then LISTED, with a copy of the listing being stored in the system generated file 'RAM.-/S.sgn'. PipeDream is then invoked and the contents of S.sgn loaded using the plain text option. The file is now ready for editing.

Once the edits are completed the following short execute file can be used to get back to BASIC:

```
#P
|N|N|N
##B~E.J~E
NEW
|FS
~R~R~R~R~R~R~R~R~R~R
~X~X~X~X~X~X~X~X~X~X
TEMPBAS
~D~D~D~DY~E
#F|EXTEMPBAS~E
```

The meaning of key sequences such as '~D' are explained in full on page 199 of the manual. Briefly, ~D means DOWN ARROW, ~R is RIGHT, ~X

means DELETE, and ^E means ENTER.

There are a few quirks which need to be taken into account when using these two routines. One is that the first 'program' results in a couple of spurious lines at the beginning and end of the listing in PipeDream. These have to be edited out. Another point is that the cursor must be located at the top leftmost point of the PipeDream listing before invoking the second routine. Finally, the routine generates a file called TEMPBAS, so care must be taken to ensure that such a filename has not already been used, otherwise it will be overwritten.

The first two of these could be overcome by using extra lines in the execute files, and I leave this as something for the other Users to experiment with.

One of the difficulties with using execute files is that it is all too easy to make a typing error when setting the file up and then spend a lot of time trying to 'debug' it. A much more convenient method of setting up execute files would be for the Z88 to memorise your keystrokes while you were actually carrying out the operation that you wanted to be automated.

This is actually possible using the 'Redirect Keyboard Input' facility which stores a copy of all 'key presses' in the system generated file :Ram./-k.sgn. This process is started by entering the sequence: 'square', '+', 'K', as shown on page 200 of the manual, and is terminated by entering 'square', '-', 'K'. All intervening key strokes are saved in the file k.sgn, in temporary RAM.

STAMPS AND CONTRIBUTIONS

Over the last few weeks I have been getting mail from members and potential members which has needed a reply but no stamp has been sent for the return trip. While 13p for a stamp may not seem much, multiply this by the 20 or so letters I am getting each week, then by 52 for a year, and you will come up with the princely sum of £135.20, or to put it another way, the total contributions paid by more than 22 members! (Aren't these pop-down calculators so useful ?!)

The whole point of my harping on like this is to ask once again, that anyone writing to me and needing a reply should please send a stamp for the reply. Thanks.

Several of you have made contributions to this issue, for which I think I can safely say all members are most grateful. Some of you have sent printed matter, some microdrive and some EPROM card. While editing this issue I have found that by far the easiest form to incorporate directly into the issue is the latter. I would therefore ask that if possible you might send articles, letters for inclusion, and any other contribution on EPROM card. This will make my job of putting together Z88 EPROM quicker and less painful! Your card will be returned as soon as I have copied the file from it. (However, please do not let the above put you off sending in anything - paper will do fine if you do not have an EPROM card!)

HARDWARE REVIEW -

Z88 PARALLEL PRINTER INTERFACE

The majority of printers on the market come with a Centronics parallel interface as standard - most offer the option (at extra cost) of adding a serial interface board which is compatible with the Z88's output.

In many ways CC's choice of RS232 is a sound one - a parallel socket can only be used to drive a printer, while a serial interface can do this and also run modems or disc drives. Of course the ideal situation would be to have both interfaces available, but this would add to the production costs of the machine.

In order to widen the range of printers which may be used with the Z88, CC have produced this interface lead which translates the serial RS232 output from the Z88 into a standard Centronics parallel signal.

The unit is in the form of a 1.75 metre printer lead, at one end a 9 way D plug to mate with the Z88's socket, at the other end a small black box about 8 x 2.5 x 4.5 cm. Built into the end of the box is the 36 way Centronics connector.

Carefully unscrewing the four tiny black screws holding on the lid of the box (NOT recommended if you wish to retain your warranty!) reveals a small printed circuit board containing six integrated circuits (more than inside the basic Z88!!) plus a few discrete components. Build quality is very good.

Included with the interface is a small sheet of instructions which basically just tell the user the sequence in which to connect the printer, lead and computer.

In use the interface worked perfectly. I tried it with a Taxan/Kaga KP810 and an Epson LQ-1000, both dot matrix printers with parallel interfaces, and the result is here before your very eyes - I used the Taxan in NLQ mode to print out this section of the newsletter. Sending codes for NLQ, subscript, superscript etc. all produced the expected results.

One niggle with the documentation : It does not state that the Z88 baud rate must be set (on the Panel) to 9600 - other baud rates cause the printer to print garbage.

In conclusion, if you already have a printer with a parallel interface, this lead from CC is an ideal solution to your interfacing problems. It represents quite good value for money, and is simplicity itself in use.

Thanks to Cambridge Computer Ltd for supplying the review unit.

PRODUCT: Parallel Printer Interface.

SUPPLIER: Cambridge Computer Ltd.
(and Retail Outlets)

PRICE: £29.95

MORE PRICE CHANGES

Yet more changes to the price of Z88 peripherals (Old prices in brackets) :

32k RAM card	£19.95	(£14.95)
32k EPROM card	£19.95	(£12.95)
PC Link	£24.95	(£14.95)

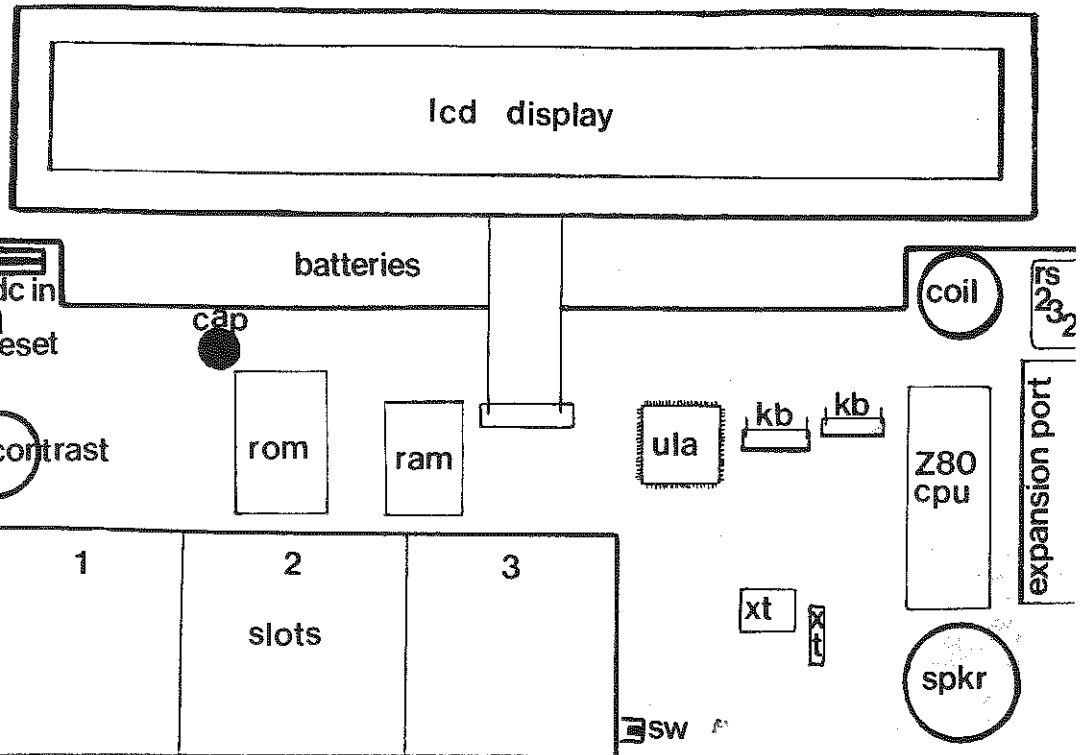
Also two new products:

Z88-BBC Link	£24.95
Parallel Printer Cable	£29.95

Lets hope that prices have now stabilised. I also hear whispers that CC will soon be selling an 'official' carrying case for Z88 - made from padded PVC with a zip fastener. Another rumour is about a spelling checker for PipeDream - presumably to be sold on an EPROM card. I would like to see a concurrent spell checker like 'Spellbound' for the QL from Sector Software.

INSIDE YOUR Z88

This article is really a quick guided tour around the innards of your favourite computer. Presumably most of you will not have taken your machine to pieces (again, NOT recommended, since it will invalidate your warranty and you also run the risk of damaging the machine), so I aim to give you a peek inside, and try to explain in layman's terms what the various parts do.



The diagram shows the Z88 with its lid and keyboard removed. Starting with the largest and most expensive component, the **Epson liquid crystal display**, at the top of the diagram. This is a complete self contained unit, in its own plastic box, connected to the main circuit board by a ribbon cable in the middle.

Immediately below the display is the **battery compartment**, with springs at either end to hold the batteries firmly in position. Now we are onto the main circuit board : This is almost the full size of the keyboard area, apart from the cutout for the **card slots**, but it contains just four integrated circuits, as well as many

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resisters, capacitors and diodes. This low chip count takes me back to the days of the Sinclair ZX81. This machine also had just four ICs, and in its day this was quite revolutionary - the ZX80 before it had about 25 chips! This massive reduction in chip count was possible by the introduction of a ULA (an Uncommitted Logic Array), which is a custom made chip which replicates the function of many off-the-shelf standard logic chips.

It is the use of the latest ULA technology in the Z88 that makes it possible to build such a powerful machine around just four chips.

From left to right, the four chips are:

128k ROM - The chip storing the operating instructions for the machine, and all the inbuilt software. The ZX81 ROM was 8k.

32k RAM - A single chip giving 32k bytes of RAM storage. The same chip as is used in the 32k RAM card. - The ZX81 RAM chip was 1k.

ULA - As explained above, this is the latest surface mounted chip with 100 connections to the circuit board. It ties all the components of the computer together.

Z80 CPU - The 'brain' of the machine, on the extreme right side of the board. This is the chip visible through the expansion port aperture. The same chip was used in the ZX80, ZX81 and ZX Spectrum, except that in common with all the other Z88 chips, this is the CMOS version of the Z80, which takes far less current and so is ideal for a battery powered portable.

On the extreme left of the circuit board is the DC input for the mains adapter, just below is

the **reset switch**, and below this the rotary potentiometer controlling the **contrast** of the display. Next to the ROM chip is the electrolytic **supercap capacitor** used as a power reservoir when changing the batteries. On the right hand side of the board is the **9 pin RS232 socket**, next to the coil used to generate the 21v needed for blowing EPROM chips. Below the RS232 socket is the **expansion port** usually hidden behind the clip-on plastic cover. Just below this is the **speaker** used for the Z88's key click, and warning beeps. This is similar to the type of speaker used in the ZX Spectrum.

Next to the ULA are the two eight way **keyboard connectors** into which the ribbon cables from the keyboard membrane slot. Below these are the two **crystals** used for timing inside the computer. The last major component worth mentioning is the **switch** attached to the card slot cover. This switches the machine into standby mode as soon as as the cover is opened.

The **keyboard** is quite interesting - Although it may appear similar to the membrane systems used on the original rubber-keyed ZX Spectrum, QL and Spectrum Plus, the technology is quite different.

With the old style membrane keyboards the switches were made by sandwiching two flexible membrane PCBs with a thin spacer layer, and putting this below the rubber keypad. Press the key onto the membrane sandwich, and the two membranes were pushed together, making the circuit. The weakness with this design was failure of the membrane - they are also quite expensive to produce (the membrane on a Spectrum + had five layers!).

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On the Z88, the membrane is just a single flexible PCB printed with the network of keyswitches. These switches are shorted by the rubber keypad itself - the rubber used to mould the pad is conductive.

ZX MICROFAIR REPORT

The club had a stand at the recent ZX Microfair, held at the New Horticultural Hall in London. This was kindly given free of charge by Mike Johnston, organiser of the Microfairs.

A number of people joined the club at the show, and the Z88 was, I believe, the only one at the show, and so attracted a lot of interest.

I am hoping to have a stand at the next Microfair, which is on December 12th, so watch out in the press for details, and I hope to see you there.

PCW SHOW REPORT

The 10th Personal Computer World show was held at Olympia in London on 23rd to 27th September. This marked the first appearance of the Z88 at a major exhibition, and CC had quite a large stand featuring about 20 machines. As well as the computer, CC were selling all the accessories including the new Parallel Printer Lead.

One section of the stand was set aside for Approved Software Suppliers, and two new software products for the Z88 were on demo. From Minerva Systems of Exeter comes Z88 Travel

Base - a database program with quick set-up, record grouping, multiple field sort and maths facilities among its features. Available late November at about £50, I hope to review it in the next Z88 EPROM. Further details from Minerva on 0392 37756.

The first game for the Z88 is a text adventure called **Old Scores** from **Simon Rockman**. It uses the map section of the Z88 display to illustrate the locations in high-res graphics. The adventure takes you round the South Bank of London in search of a valuable music manuscript. Further details from Simon on 01-959 6239.

Another new product was a file transfer pack to work between the Z88 and Amstrad PCW machines. From **C-Port Ltd** it will convert files between PipeDream and CP/M, and is fully menu driven. Please note though that you do require the CPS 8256 serial port adapter for your PCW. Price £24.95, details on 01-376 5098.

The final new product is from **Wordmongers Ltd** and is their **Phone Post System**, which is an electronic mail system available for a large number of machines, from the ACT Apricot PC to the Xerox 820 and ZX Spectrum.

The system allows the user to send messages, files or even pictures to other PPS users with complete security. The PPS uses a machine as a Base unit, which can be an IBM PC among others, and this can talk to any number of Z88 terminal systems. Z88 terminal software for PPS plus base software for IBM or ACT machines costs £380. Further details from Wordmongers on 0296 437878. (See their ad in this issue)

Wordmongers Ltd.



21 Edison Rd, Rabans Lane, Aylesbury, Bucks. HP19 3TE
☎(0296) 43 78 78. Prestel 029634822. Telecom Gold 84:WOT001

Terminal Software

There are currently three varieties of this suite available for the Z88. These programs are also available on the Amstrad PCW 8256.

The three versions are:-

Z-Term. Although the Z88 comes with a terminal package, there are certain essential facilities which are unique to Z-term.

Z-term Features:-

- ◇ Hayes and dumb modem compatible.
- ◇ File transfer using X-modem.
- ◇ ASCII text file capture and transmission using XON/XOFF flow control.
- ◇ Autodial directory facility for 5 numbers.
- ◇ 5 user defined function keys.

Z-term is £49.99 per copy inc VAT.

G-Term. Wordmongers G-term is a variant of Z-term specially tailored for easy access to Telecom Gold and the other parts of the international Dialcom network. Wordmongers G-term for the Z88 incorporates most of the features of Z-term, as described above with the additional benefit of automatic log-on to Telecom Gold.

G-term Features:-

- ◇ Hayes and dumb modem compatible.
- ◇ File transfer using X-modem.
- ◇ ASCII text file capture and transmission using XON/XOFF flow control.
- ◇ Autodial directory facility for 5 numbers.
- ◇ Automatic log-on to Telecom Gold when connected directly or when connected via PSS.

G-term is £49.99 per copy inc VAT.

M-Term. Wordmongers M-term is another variant of Z-term tailored for the Mercury 7500 electronic mail system. Wordmongers M-term for the Z88 incorporates most of the features of Z-term, as described above with the additional benefit of automatic log-on to Mercury 7500.

M-term Features:-

- ◇ Hayes or Dumb modem compatible.
- ◇ File transfer using X-modem.
- ◇ ASCII text file capture and transmission using XON/XOFF flow control.
- ◇ Autodial directory facility for 5 numbers.
- ◇ Automatic log-on to Mercury 7500 when connected directly or when connected via an intermediate network.

M-term is £49.99 per copy inc VAT.

Wordmongers Ltd.



21 Edison Rd, Rabans Lane, Aylesbury, Bucks. HP19 3TE
☎(0296) 43 78 78. Prestel 029634822. Telecom Gold 84:WOT001

PPS Wordmongers Phone Post System.

This system is a private electronic mail system that sends a message, a complete file or even a picture via the telephone lines anywhere in the world. It uses standard micro-computers and modems plus our economically priced PPS software.

PPS Prices:-
PPS Base (IBM or Apricot) £ 99.50
PPS Terminal software -
IBM/Apricot £ 49.99
PPS Terminal software -
Cambridge Z88 £ 49.99

Wordmongers TX file transfer system

File transfer is about sending a copy of a file, in its entirety, from one micro to another. The Wordmongers TX package is now available for over 100 different micros including most popular CP/M and MSDOS machines as well as PC compatibles and the Sinclair QL.

TX has been in use for over 5 years.

TX is supplied for the pair of machines required. This pack contains the disk or cartridge for each of the pair to be linked, a manual and cable.

A TX pack for a pair of machines, one of which is the Z88, is £99.50.

Wordmongers software is licensed not sold. The full details of the software licence are available upon request from Wordmongers Ltd.

MODEMS

Acoustic couplers

1200/75 version. £ 49.99
300/300 £138.00

Direct connect modems

1200P is a new small Hayes compatible pocket modem £113.85

The answercall modem is a 300/300 direct connect modem. £ 69.95

HS4000 is a Hayes compatible desktop modem which can be supplied in a variety of formats from 300/300 to 1200/1200.

i.e. HS4000 V22 £479.00

Modem cable (if required). . . £9.99

GAMES

32K Eproms - Normal price - Free game.

Normal price and we throw in a game. When you are bored with the game, use it as a normal Eprom. . . . £19.95

TERMINAL SOFTWARE

Z-term - General purpose with X-modem and user defined function keys.

G-term - Telecom Gold terminal.

M-term - Mercury 7500 terminal.

P-term - Wordmongers PPS terminal.

All terminals cost . . . £49.99

Prices are valid from October 1987 and include V.B.I at 15%. Postage & Packing must be added to the amount you send at the rate of £2.00 per order.

****10% DISCOUNT TO CLUB MEMBERS (Except Modems)****

CLUB DISCOUNT

As mentioned in their advertisement in this issue, Wordmongers Ltd is the first company to offer discount to Club members. They have kindly offered all members a **10% DISCOUNT** on most of their range except Modems. Included in the discount arrangement is Z88 EPROM cards, which also contain a free program when purchased from Wordmongers.

To claim your discount you should clearly state your membership number on your order, and also enclose the **address panel** from the envelope of the **current issue** of Z88 EPROM. (You may now empty the waste bin to retrieve your envelope!)

ROM UPGRADES

By the time this issue reaches you, all users who had early machines without the 2.2 ROM should have received a letter from CC asking them to return their machine for a free ROM upgrade. You may find that the version number of your new ROM may be 3.00 - but don't worry, this is not a new version of the software, but merely the same code as the 2.2 EPROMs burnt into ROM.

MEMBERSHIP RATES

Membership of the Club is by subscription to the club newsletter, Z88 EPROM. Cheques or Postal Orders should be made payable to 'Z88 Users Club', and overseas members should send International Money Orders or Eurocheques.

Z88 EPROM - NOV-DEC 1987

	6 Months	12 Months
United Kingdom & BFPO Addresses	£3.50	£6.00
Rest of World	£5.00	£9.00

BACK NUMBERS

Back numbers of Z88 EPROM are available by mail from the address below. Please send cheque etc. as above for £1.00 per copy including p&p.

CONTRIBUTIONS TO Z88 EPROM

This is your magazine, and your contributions will be helpful to other members whatever form they take - letters, articles or programs. Your contributions should be sent to:

Z88 Users' Club
68 Wellington Street
Long Eaton
Nottingham
NG10 4NG

If you would like a personal reply to your letter, please make this clear and enclose an SAE for the reply - postage is so costly to the club.

Hand written contributions should be a maximum of two pages. Longer items should be printed out in the format to fit this A5 newsletter, or they may be sent saved onto EPROM card which will be returned after the file has been copied. Again it would help if you could enclose return postage for the card.

Please put your name, address and membership number on all contributions - in the case of

contributions sent on EPROM, head the article with this information.

USERS' CLUB SMALL ADS & SWAPSHOP

If any members have items of hardware or software they no longer need, the club will print short advertisements in the newsletter. These may be for items wanted or for sale. Small ads and swapshop insertions are FREE, subject to the following conditions:

- 1)The items are computer related.
- 2)Items for sale must not be advertised for more than £100.
- 3)Ads are only accepted for this section from private individuals - NO TRADE PLEASE.
- 4)Ads and insertions are no more than 25 words.

TRADE ADVERTISEMENTS

Trade members are welcome to advertise in Z88 EPROM, at very favourable rates. Your ads will be closely targetted to the Z88 market, since the newsletter is only taken by people using the Z88. As an example, a full A5 page in the newsletter, reproduced from your B & W camera ready artwork already to size, would cost £25 for one insertion. Generous discounts will be given if you book multiple insertions over several issues. Please send a SAE for full details.

MERRY CHRISTMAS & HAPPY NEW YEAR

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